

REMARKS**Claim Rejections – 35 U.S.C. § 103**

The Examiner has rejected claims 1-3, 5-8, 12-25, 27-30, and 37-38 under 35 U.S.C. §103(a), as being unpatentable over Chen et. al. (Dynamic Trace Selection Using Performance Monitoring Hardware Sampling, March 2003, IEEE) (“Chen”) in view of Roediger et al. (US Pat. 6,938,249 B2) (“Roediger”). For the reasons set forth below, Applicant asserts that the cited references fail to teach, suggest, or render obvious Applicant’s invention as claimed in claims 1-3, 5-8, 12-25, 27-30, and 37-38.

Roediger teaches a compiler that includes a “profile-based loop optimizer [that] generates an execution frequency table for each loop that gives more detailed profile data that allows making a more intelligent decision regarding if and how to optimize each loop in the computer program.” (Roediger abstract)

Chen teaches a dynamic optimization system that collects a profile and applies performance based optimizations while a program is running (Chen Section 1, Introduction)

With respect to independent claim 1 in the presently claimed invention, Applicant teaches and claims:

“A method, comprising collecting a loop trip count continuously during runtime of a region of code being executed that contains a loop, the loop trip count being collected each time the loop is entered by one or more monitoring counters instrumented in the region of code, calculating an average trip count continuously during runtime, *wherein each average*

trip count comprises a sequential plurality of collected trip counts over an interval of time, classifying each average trip count to be in one of a plurality of conditions, the one of the plurality of conditions to identify one or more code modification techniques applicable to the loop, dynamically applying, during the same runtime, the one or more applicable code modification techniques to alter the code that relates to the loop when the average trip count classification changes, halting the trip count data collection during the same runtime when a threshold value of consecutive intervals of time pass without a trip count classification change, and removing one or more monitoring counters, during the same runtime, from the region of code relating to the loop when trip count data collection is halted.” (Claim 1) (Emphasis added)

Applicant asserts that Roediger and Chen, each taken alone or in combination, do not teach, suggest, or render obvious Applicant’s invention as claimed in independent claim 1 because neither Roediger nor Chen teach at least *halting the trip count data collection during the same runtime when a threshold value of consecutive intervals of time pass without a trip count classification change, and removing one or more monitoring counters, during the same runtime, from the region of code relating to the loop when trip count data collection is halted.*

Applicant’s method teaches dynamically calculating the average trip count repeatedly once each time interval and if the trip count doesn’t change, halting trip count data collection and removing one or more monitoring counters when trip count data collection is halted. This is all accomplished during the same runtime of the code.

Portions of the limitations that were in the now cancelled claim 8 are now included into independent claim 1. This is important because Applicant would like to address the Examiner's arguments for his rejection of claim 8 in the current office action. The Examiner states that Roediger discloses the method of counting consecutive intervals of time that do not have a trip count classification change, halting the trip count data collection if the number of consecutive intervals exceeds a threshold value, and removing the one or more monitoring counters from the code relating to the loop.

Specifically, the Examiner quotes Roediger column 9, lines 25-51 as teaching this methodology. Applicant has carefully studied Roediger column 9, lines 25-51, as well as the remainder of Roediger, and has not found anything related to the limitation that was previously claimed in Applicant's claim 8 (and now substantially integrated into independent claim 1). The only thing Roediger discloses in column 9, lines 25-51 is exactly what the Examiner has stated in his office action.

Namely, Roediger discloses portions of a methodology regarding how many times the loop iterated before exiting. This is similar to counting iterations for a single loop trip count. But, this does not disclose anything related to *counting consecutive intervals of time that do not have a trip count classification change*. Nor does it disclose *halting the trip count if the consecutive intervals of time without a trip count classification change exceed a threshold value*. Nor does it disclose *removing the one or more monitoring counters from the code relating to the loop*.

Applicant's limitations deal with trip count classification changes, halting the trip count monitoring, and removing the trip count monitoring counters. These three limitations, now integrated into Applicant's independent claim 1, have nothing to do with

simply obtaining a single count of loop iterations, which is the extent of what is discussed in Roediger, column 9, lines 25-51. Thus, because Chen and Roediger do not teach *halting the trip count data collection during the same runtime when a threshold value of consecutive intervals of time pass without a trip count classification change, and removing one or more monitoring counters, during the same runtime, from the region of code relating to the loop when trip count data collection is halted*, Applicant respectfully submits that Chen and Roediger, each taken alone or in combination, do not render newly amended independent claim 1 obvious.

Independent claim 23 includes limitations that are similar to independent claim 1. Thus, for at least the same reasons advanced above in relation to independent claim 1, Applicant respectfully submits that Chen and Roediger, each taken alone or in combination, do not teach, suggest, or render obvious claim claim 23.

Claims 3, 5-6, 12-14, 24-25, and 27-28 depend from and further limit independent claims 1 and 23, respectively. Thus, for at least the same reasons advanced above in relation to independent claims 1 and 23, Applicant respectfully submits that Chen and Roediger, each taken alone or in combination, do not teach, suggest, or render obvious claims 3, 5-6, 12-14, 24-25, and 27-28.

Claims 2, 7-8, 15-22, 29-30, and 37-38 have been cancelled. Thus, the Examiner's rejection of these claims has been rendered moot.

Claims 35-36 will be addressed below in relation to the discussion below of their rejected base claim, independent claim 31.

Therefore, Applicant respectfully requests withdrawal of the 35 U.S.C. 103(a) rejection of claims 1-3, 5-8, 12-25, 27-30, and 37-38.

The Examiner has rejected claims 31-33 and 35-38 under 35 U.S.C. §103(a), as being unpatentable over Roediger in view of Chen. For the reasons set forth below, Applicant asserts that the cited references fail to teach, suggest, or render obvious Applicant's invention as claimed in claims 31-33 and 35-38.

Independent claim 31 includes similar limitations as independent claim 1. Thus for at least the same reasons advanced above in relation to independent claim 1, Applicant respectfully submits that Roediger and Chen, each taken alone or in combination do not teach, suggest, or render obvious claim 31.

Claims 33 and 35-36 depend from and further limit independent claim 31. Thus, for at least the same reasons advanced above in relation to independent claim 31, Applicant respectfully submits that Roediger and Chen, each taken alone or in combination, do not teach, suggest, or render obvious claims 33 and 35-36.

Claims 32 and 37-38 have been cancelled. Thus, the Examiner's rejection of these claims has been rendered moot.

Therefore, Applicant respectfully requests withdrawal of the 35 U.S.C. 103(a) rejection of claims 31-33 and 35-38.

The Examiner has rejected claims 4, 9-11, and 26 under 35 U.S.C. §103(a), as being unpatentable over Chen in view of Roediger and further in view of Ghosh et. al. (Integrating High-Level Optimization in a Production Compiler: Design and Implementation Experience, April 2003, Springer-Verlag Berlin Heidelberg) ("Ghosh"). For the reasons set forth below, Applicant asserts that the cited references fail to teach, suggest, or render obvious Applicant's invention as claimed in claims 4, 9-11, and 26.

Claims 4, 9-11, and 26 depend from and further limit independent claims 1 and 23, respectively. Thus, for at least the same reasons advanced above with respect to independent claims 1 and 23, Applicant respectfully submits that Chen, Roediger, and Ghosh, each taken alone or in combination, do not teach, suggest, or render obvious claims 4, 9-11, and 26.

Thus, Applicant respectfully requests withdrawal of the 35 U.S.C. 103(a) rejection of claims 4, 9-11, and 26.

The Examiner has rejected claim 34 under 35 U.S.C. §103(a), as being unpatentable over Roediger in view of Chen and further in view of Ghosh. For the reasons set forth below, Applicant asserts that the cited references fail to teach, suggest, or render obvious Applicant's invention as claimed in claim 34.

Claim 34 depends from and further limits independent claim 31. Thus, for at least the same reasons advanced above with respect to independent claim 31, Applicant respectfully submits that Roediger, Chen, and Ghosh, each taken alone or in combination, do not teach, suggest, or render obvious claim 34.

Thus, Applicant respectfully requests withdrawal of the 35 U.S.C. 103(a) rejection of claim 34.

CONCLUSION

Applicant respectfully submits that all rejections have been overcome and that all pending claims are in condition for allowance.

If there are any additional charges, please charge them to our Deposit Account Number 50-4238. If a telephone conference would facilitate the prosecution of this application, the Examiner is invited to contact Derek J. Reynolds at (916) 356-5374.

Respectfully Submitted,

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/Derek J. Reynolds/
Derek J. Reynolds
Reg. No.: 60,104

Intel Corporation
c/o Intellevate, LLC
P.O. Box 52050
Minneapolis, MN 55402
(916)356-5358